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PLANT STARTER POT WITH REMOVABLE BASE

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CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims the benefit of the filing date of U.S. Provisional Patent Application, Ser. No. 60/440,802, filed January 16, 2003.

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STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

15

REFERENCE TO A MICROFICHE APPENDIX

[0003] Not applicable.

20

TECHNICAL FIELD

[0004] The present invention relates generally to plant starter pots, and more particularly to plant starter pot having a selectively removable base for facilitating an intact transplantation of the developing plant.

BACKGROUND INFORMATION AND DISCUSSION OF RELATED ART

[0005] Starter pots are employed for a number of purposes, most notably to ensure tight control over the initial conditions under which a plant germinates and begins the early stages of its growth. In a properly selected pot, a plant's water, soil, light, and nutrient needs can be monitored and carefully regulated. The wide variety of starter pots in use defy a brief survey. In consequence, the discussion of related art that follows is intended to provide a concise consideration of just a small sample of starter pot types. The following designs show how plant starter pots can be adapted for several different purposes.

[0006] U.S. Pat. No. 4,040,207, to Lancaster, for instance, discloses a double-walled pot having an inner pot nested within an outer pot. In this design, the nested and nesting pots are fabricated from impermeable material and configured with a separating space. The nested pot includes holes in its bottom. Time-released fertilizer is affixed to the outside wall of the inner pot, such that when water is poured into the annular gap between the upper rims of the respective pots, it percolates downwardly to the bottom of the nested pot and migrates to the soil containing plant roots. This patent, then, is illustrative of a method of providing nutrients to a plant through nested pots. U.S. Pat. No. 4,791,755, to Bilstein, also teaches a permeable pot nested within an impermeable one, with much the same end in view.

[0007] U.S. Pat. No. 4,027,429, to Georgi, teaches a plastic starter pot having an aperture in the bottom wall. The aperture is spaced from the side walls of the pots and has an upturned lip around its periphery to form an annular water reservoir. A detachable disc is enclosed within the pot and rests on the upturned lip to support soil in the pot and to prevent the soil from entering

the water reservoir space. The disc has apertures to permit water drainage. An annular on the bottom of the disc overlaps the upturned lip to prevent water from escaping the reservoir space.

[0008] U.S. Pat. No. 4,043,077, to Stonehocker, shows an expandable starter pot having sides with corrugated, accordion-like folds that expand to accommodate plant root growth. Soil is added over the course of the expansion to maintain an appropriate surface level of the soil.

[0009] U.S. Pat. No. 4,161,844, to Hentschel et al., teaches a hydroculture plant pot with an annular central compartment containing an inserted container for receiving a hydroculture fertilizer. The inserted container has apertures sized smaller than the particles of the hydroculture fertilizer.

[0010] U.S. Pat. No. 5,852,896, to Flasch, Jr., discloses a plant pot having an inner annular wall with transverse holes around its circumference and up its length. The inner wall includes a water impervious circumferential band at its upper end to maintain the soil top surface dry by preventing the lateral in-flow of irrigation water. The pot further includes an outer annular wall spaced apart from the inner wall to define an open space with upper opening between the walls into which irrigation water can be applied and air may flow. The space between the walls at the bottom end of the space is sealed with a floor. The bottom floor includes drain holes.

[0011] U.S. Pat. No. 5,044,120, to Couch, shows a double-walled plant pot, as in Flasch, Jr., but having a permeable inner side wall, and an impermeable outer side wall. The space between the walls may be filled with fertilizer with varying concentrations according to depth. Larger plants obtain more fertilizing nutrients. The inner wall, bottom, and outside may be separable.

[0012] U.S. Pat. No. 6,038,813, to Moore, et al., teaches a plant pot having a side wall and first

and second axially spaced-apart bottom portions. The inner wall and second portion have a dimension to support a second container within the side wall and the inner wall of the container includes at least one drain opening so that the container retains water at a level at or below the second bottom portion.

5 [0013] U.S. Pat. No. 6,536,159, to Van Den Ende, discloses a plant pot having a first and second spaces bounded by respective upright walls and a bottom. The first and second spaces are separated by a porous plate. The plant pot also includes a third space bounded by a third upright wall and a bottom that surrounds the second space, and the second space serves to accommodate a moisture-retaining, hydrating but air-permeable material.

10 [0014] The foregoing patents reflect the current state of the art of which the present inventor is aware. Reference to, and discussion of, these patents is intended to aid in discharging Applicant's acknowledged duty of candor in disclosing information that may be relevant to the examination of claims to the present invention. However, it is respectfully submitted that none of the above-
15 indicated patents disclose, teach, suggest, show, or otherwise render obvious, either singly or when considered in combination, the invention described and claimed herein.

BRIEF SUMMARY OF THE INVENTION

[0015] The present invention is plant starter pot having a selectively removable base to facilitate intact transplantation of a growing plant. It is therefore an object of the present
20 invention to provide a new and improved plant starter pot having a selectively removable base, which allows for increased drainage, if desired, and which facilitates intact transplantation when

a plant's root structure is sufficiently mature. Other novel features which are characteristic of the invention, as to organization and method of operation, together with further objects and advantages thereof will be better understood from the following description considered in connection with the accompanying drawings, in which preferred embodiments of the invention are illustrated by way of example. It is to be expressly understood, however, that the drawings are for illustration and description only and are not intended as a definition of the limits of the invention. The various features of novelty which characterize the invention are pointed out with particularity in the claims annexed to and forming part of this disclosure. The invention resides not in any one of these features taken alone, but rather in the particular combination of all of its structures for the functions specified.

[0016] There has thus been broadly outlined the more important features of the invention in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are, of course, additional features of the invention that will be described hereinafter and which will form additional subject matter of the claims appended hereto. Those skilled in the art will appreciate that the conception upon which this disclosure is based readily may be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present invention. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the present invention.

[0017] Further, the purpose of the Abstract is to enable the U.S. Patent and Trade-mark Office and the public generally, and especially the scientists, engineers and practitioners in the art who

are not familiar with patent or legal terms or phraseology, to determine quickly from a cursory inspection the nature and essence of the technical disclosure of the application. The Abstract is neither intended to define the invention of this application, which is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

5 [0018] Certain terminology and derivations thereof may be used in the following description for convenience in reference only, and will not be limiting. For example, words such as "upward," "downward," "left," and "right" would refer to directions in the drawings to which reference is made unless otherwise stated. Similarly, words such as "inward" and "outward" would refer to directions toward and away from, respectively, the geometric center of a device or
10 area and designated parts thereof. References in the singular tense include the plural, and vice versa, unless otherwise noted.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0019] The invention will be better understood and objects other than those set forth above will
15 become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawing wherein:

[0020] FIG. 1 is a cross-sectional side view in elevation of a first preferred embodiment of the plant pot with a removable bottom of the present invention;

[0021] FIG. 2 is a top view of the base of the first preferred embodiment of the present
20 invention;

[0022] FIG. 3 is an exploded perspective view showing use of a specialized tool employed to

removed the base after a plant has taken root in soil contained within the pot;

[0023] FIG. 4 is a perspective view showing a technique for using the specialized tool to remove the base;

[0024] FIG. 5 is a perspective view of a third preferred embodiment of the starter pot of the present invention.

[0025] Drawing Reference Numerals

100	plant starter pot, generally	110	main body
120	upper end of main body	130	first opening of main body
140	lower end of main body	150	second opening of main body
160	base member	170	drain hole
180	exterior threads on main body	180'	interior threads in base member
190	rim	200	second preferred embodiment
210	threaded pot base	220	first hole
230	second hole	240	geometric center of the base
250	base removing tool	260	planar bar
270	first stud	280	second stud
290	user's foot	300	user's foot
310	first end portion	320	second end portion
330	pot body	340	upper rim of pot body
400	third preferred embodiment	410	starter pot body
420	first side	430	second side

	440	third side	450	fourth side
	460	base-engaging portion	470	open top
	480	open bottom	490	tray
	500	side portion	510	side portion
5	520	tongue	530	tongue
	540	groove	550	groove
	560	exterior surface of side 500	570	exterior surface of side 510
	580	drain holes		
	P	plant	R	roots
10	S	nutrient medium	U	user

DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION

[0026] Referring to FIG. 1, a cross-sectional side view in elevation of the inventive apparatus, this view shows that the plant pot with a removable base of the present invention, generally
15 denominated 100 herein, comprises a main body 110, preferably a truncated cone in shape (defining a frustum), and having an upper end 120 with a first opening 130 and a lower end 140 with a second opening 150. The pot further comprises a generally circular base member 160 having a bottom drain hole 170. The main body includes threads 180 on its exterior surface proximate the lower end and which selectively mate with interior threads 180' in a rim 190 of the
20 base member, the latter structure forming a kind of socket into which the main body is threadably inserted. Accordingly, the base member may be installed on the main body by aligning the

matable threads and turning the base member relative to the main body. Conversely, when desired, the base may be selectively removed from the main body by turning main body, or the base, in the opposite direction relative to the other member.

[0027] As will be readily appreciated by those with skill in the art, any of a number of suitable
5 alternative means for connecting the base member to the main body may be employed, including a bayonet fitting, a friction fit, snaps or clips, and the like. Additionally, when the pot is made of sufficiently pliable material easily punctured by a tool such as a screwdriver, the base can be integrated into the main body, which is provided with perforations comprising a plurality of side-
10 by-side holes defining a ring which circumscribes the main body near its lower end. Thus, the base of the main body can be removed simply by punching in the holes and pulling off the base. The essential feature is that the base member, comprising a cover for the bottom opening in the main body, be removable in its entirety and that the bottom opening be exposed in substantially its entirety through the removal of the base member.

[0028] According to the present invention, when a plant **P** develops to the point that its roots
15 require more space, either because the plant is becoming root bound or because the pot can no longer contain sufficient water or nutrients to provide optimally for the plant's metabolic needs, then the base member can be removed. This allows the roots **R** to emerge from the bottom of the pot and the nutrient medium **S** and facilitates placement of the pot in a larger pot or, alternatively, stacking in an identically sized starter pot. In either case, this procedure keeps the root structure
20 substantially intact, minimized transplant shock, and exposes the roots to additional soil, space, water and other nutrients, thereby obviating the need for conventional transplanting.

[0029] A preferred method of removing the base, particularly in larger pots, is shown in FIGS. 2 through 4. In a second preferred embodiment of the present invention, generally denominated 200, the threaded pot base 210 includes first and second holes 220, 230, located on opposite sides of the geometric center 240 of the pot. A specialized base removing tool 250 is provided, said
5 tool comprising a length of generally planar bar 260 and having first and second studs 270, 280 shaped and sized for a snug but easy insertion into first and second holes 220, 230. If the holes in the base member are substantially circular, then the studs are preferably substantially cylindrical. When a plant is readily for transplanting from the pot to a larger pot or to the ground, the pot is placed over the tool and the studs inserted into the base member holes. The user U then stands,
10 placing his or her feet 290, 300 on first and second end portions 310, 320 of the bar 260. The pot body 330 is then grasped at its upper rim 340 and twisted off the base (see FIG. 4). This method of removing the base is particularly useful when working with plants that have grown over a long period of time in a large starter pot. The accumulation of dirt and other contaminants in the plant base can work into the threads or other connection means and make removal difficult without the
15 mechanical advantage provided by the base removing tool.

[0030] As will be appreciated, the inventive starter pot could be fashioned in any of a number of suitable shapes. Rather than having a frusto-conical shape, the pot body could be substantially cylindrical, or it could be polygonal. For instance, in a third preferred embodiment 400, shown in FIG. 5, the starter pot body 410 is generally cuboid and includes first through fourth sides 420,
20 430, 440, 450, a base-engaging portion 460, an open top 470 and an open bottom 480. A substantially planar tray or base 490 is provided to cover the opening at the bottom of the pot, the

tray having two opposing vertically-disposed side portions 500, 510, each having a tongue 520, 530, which slides into a corresponding groove 540, 550 on opposing sides of the pot body in the base-engaging portion. The exterior surfaces 560, 570 of sides 500, 510 may be provided with surface features to assist in removing the tray once the plant had been established. Alternatively, handles of one kind or another could be integrated into the sides. Accordingly, the principle of operation of this embodiment would obtain for any suitable polygonal shape given to the pot body. Additionally, tray 490 may be provided with drain holes 580, though drainage may also be facilitated by spacing the tray surface from the base-engaging portion of the pot body through the dimensioning of the side portions and tongues of the tray.

[0031] The above disclosure is sufficient to enable one of ordinary skill in the art to practice the invention, and provides the best mode of practicing the invention presently contemplated by the inventor. While there is provided herein a full and complete disclosure of the preferred embodiments of this invention, it is not desired to limit the invention to the exact construction, dimensional relationships, and operation shown and described. Various modifications, alternative constructions, changes and equivalents will readily occur to those skilled in the art and may be employed, as suitable, without departing from the true spirit and scope of the invention. Such changes might involve alternative materials, components, structural arrangements, sizes, shapes, forms, functions, operational features or the like.

[0032] Accordingly, the above description and illustrations should not be construed as limiting the scope of the invention, which is defined by the appended claims.